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SUSQUEHANNA RIVER BASIN COMMISSION STAFF REVIEW

OF

BALTIMORE DISTRICT OFFICE

CORPS OF ENGINEERS

CODORUS CREEK

WASTEWATER MANAGEMENT

STUDY

DECEMBER 18, 1973

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SUSQUEHANNA RIVER BASIN COMMISSION

ROBERT J. BIELO
EXECUTIVE DIRECTOR

THIS STAFF REPORT WILL SERVE AS THE COMMISSION'S INTERIM COMMENT ON THE OVERALL STUDY WITH RECOGNITION THAT BEFORE ANY FINAL PLAN OF REGIONAL WASTEWATER MANAGEMENT IS IMPLEMENTED, THE PROPOSAL BE SUBJECT TO FUTURE REVIEW AND ACTION.

PREPARED BY:

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INTRODUCTION

The Codorus Creek Wastewater Management Study was conducted by the Corps of Engineers, Baltimore, Maryland. The Study's Summary Report and Conclusions were completed in August 1972. The report of this Study, consisting of nine volumes, was forwarded to the Susquehanna River Basin Commission for review and comments on November 16, 1973. These nine volumes are listed below:

1. Analysis of Conclusions: Summary of Findings and Recommendations

2. Summary of Report and Conclusions

3. Appendix A, Vol. I, Technical Studies -- Inventory of Present Systems and Water Quality Conditions

4. Appendix A, Vol. II, Technical Studies -- Assessment of Future Water Resource and Wastewater Management Needs

5. Appendix A, Vol. III, Technical Studies -- Identification and Evaluation of Alternatives

6. Appendix A, Vol. IV, Technical Studies -- Discussion of Finalized Alternatives for Choice

7. Appendix B -- Impact Studies

8. Appendix C, Analysis of Institutional Arrangements

9. Supplement to Appendix C, Implementing a Land-Based Approach -- An Analysis of Approaches

SUMMARY OF CORPS' PROPOSALS

The proposals presented in the Study are projected to the year 2000 and provide a framework for future expansion to meet the year 2020 requirements. The expansion to meet the year 2020 projections will involve only the treatment facilities. The transmission pipelines are sized to meet the year 2020 flow requirements.

The four "Alternatives for Choice" (modifications for two of the alternatives, a water reuse option, industrial waste management and storm water management) presented in the Study are summarized below.

Plan to Meet Current Standards--The Plan to Meet Current Standards provides for upgrading of existing or programmed treatment facilities to comply with the standards established by the Commonwealth of Pennsylvania (Table 1) which are consistent with the 1973 national goals of providing water quality for protection and propagation of fish and wildlife, and for recreation in and out of the water. A total of eight major sewage treatment plants (STP) and three package type sewage treatment plants would serve the Study area. These plants are as follows:

Sewage Treatment Plants

City of York	Glen Rock
Springettsbury	Shrewsbury-New Freedom
Dover Township	Railroad
Hanover	Jefferson
Penn Township	Seven Valleys
Spring Grove	Winterstown

The existing Dover Borough and Red Lion treatment plants would be abandoned. The Red Lion-Dallastown-Yoe area wastes would be conveyed through a new interceptor line along Mill Creek to the Springettsbury STP and the Dover Borough wastes will be transferred to the Dover Township STP (see Figure 1). Construction of transmission facilities would be required to transfer wastewaters from Jacobus-Loganville to York to avoid discharge of wastes into the York Water Company reservoirs on the East Branch of Codorus Creek. The process units selected would be as follows:

TABLE I

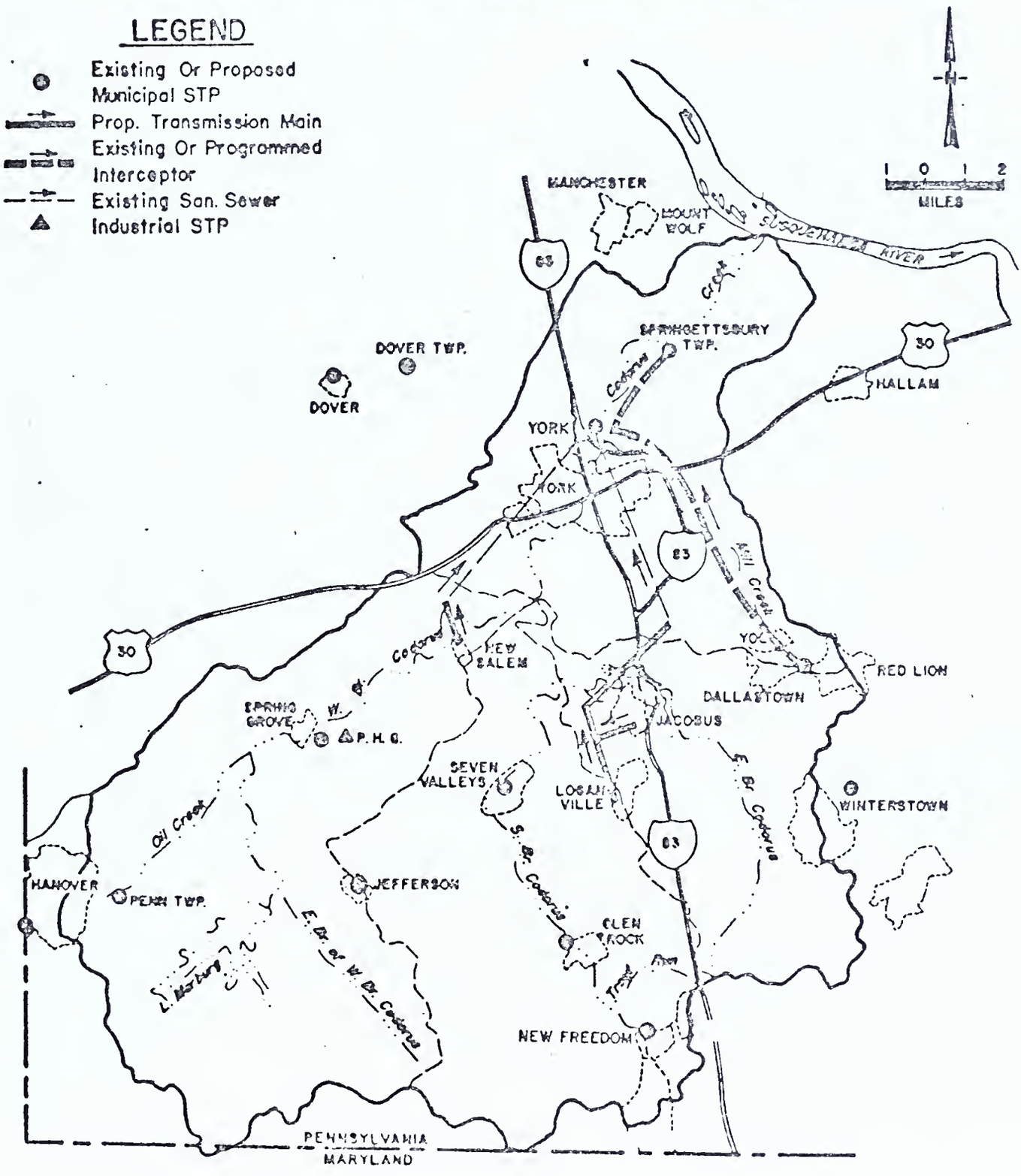
WATER QUALITY CRITERIA

Water Characteristics	Criteria Groups	
	Group A	Group B
1. pH	a1 6.0 to 8.5	a1 6.0 to 8.5
2. Dissolved Oxygen	b1 Minimum daily average 6.0 mg/L; no value less than 5.0 mg/L.	b2 Minimum daily average 5.0 mg/L; no value less than 4.0 mg/L.
3. Total Iron	c1 Not to exceed 1.5 mg/L	c1 Not to exceed 1.5 mg/L
4. Temperature	d1 Not to be increased more than 5° above natural temperatures or to be increased above 58° F.	d2 Temperature not to exceed 5° F. rise above ambient temperature or a maximum of 87°F. whichever is less; not to be changed by more than 2° F. during any one hour period.
5. Dissolved Solids	e Not to exceed 500 mg/L as a monthly average value; not to exceed 750 mg/L at any time.	e Not to exceed 500 mg/L as a monthly average value; not to exceed 750 mg/L at any time.
6. Bacteria (Coliforms)	f For period 5/15 to 9/15, coliforms not to exceed 1000/100 ml. For period 9/16 to 5/14, coliforms not to exceed 5000/100 ml.	f For period 5/15 to 9/15, coliforms not to exceed 1000/100 ml. For period 9/16 to 5/14, coliforms not to exceed 5000/100 ml.

FIGURE 1

CODORUS CREEK WASTEWATER MANAGEMENT STUDY

PLAN TO MEET CURRENT STANDARDS



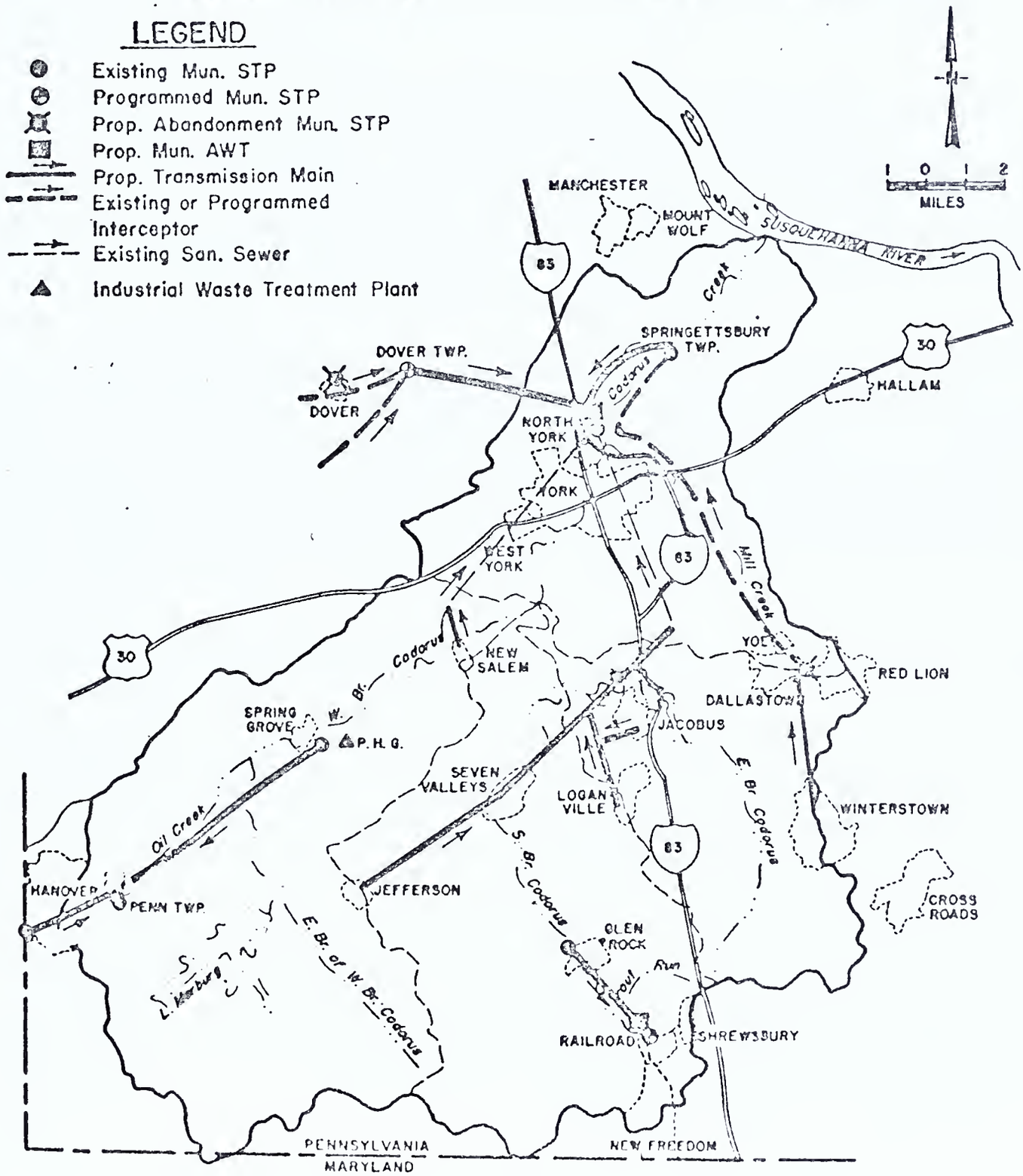
Primary and Secondary Biological Treatment	Use of conventional primary settling and activated sludge processes or contact stabilization as practiced at present plants.
Phosphorus Removal (80% Level)	Chemical precipitation using primary and secondary units for reaction and settling operations.
Tertiary Suspended Solids BOD Removal	Mixed media filtration coupled with chemical treatment.
Sludge Treatment and Disposal	Aerobic and Anaerobic digestion with land application as agricultural soil conditioner.

Basic All Water Plan--This plan entails the construction of three sub-regional advanced waste treatment (AWT) facilities to receive treated wastes from local secondary treatment plants. The general framework of this plan is shown in Figure 2.

For the York urban areas, initial secondary treatment would be provided by the York, Springettsbury and Dover Township treatment plants for all of the area wastes, including waste flows from Red Lion and Dover Borough, and industrial waste flows which are presently being discharged directly into the surface waters. The Red Lion and Dover Borough treatment plants are to be abandoned and expansion of the existing secondary treatment facilities are required to meet projected flows. Additionally, waste waters

CODORUS CREEK WASTEWATER MANAGEMENT STUDY

ALL WATER TREATMENT PLAN



from Jacobus, Loganville, Jefferson, Seven Valleys and Winterstown would be transported to the York secondary treatment plant. The first AWT facility would be located adjacent to the York secondary treatment plant to receive treated wastes from the secondary treatment plants in the York urban area. A total site area of 67 acres would be required, of which 45 acres would be used in the first phase construction designed for the 1985 average flow of 35 mgd and would discharge treated wastes into Codorus Creek.

The second AWT facility would be located adjacent to the Penn Township secondary treatment facility and would serve the Hanover, Penn Township, and Spring Grove secondary treatment facilities. The existing secondary treatment plants would be utilized and expanded as necessary to meet future flows. The AWT would be designed for the year 2000 average flow and the effluent would be discharged into Oil Creek.

Glen Rock, Shrewsbury, Railroad and New Freedom would be served by the third AWT located next to the New Freedom-Shrewsbury-Railroad proposed secondary treatment plant. The Glen Rock secondary treatment plant and the New Freedom-Shrewsbury-Railroad treatment plant would be utilized for secondary treatment and expanded as necessary. The AWT is to be designed for the year 2000 average flow and would discharge into the South Branch of Codorus Creek.

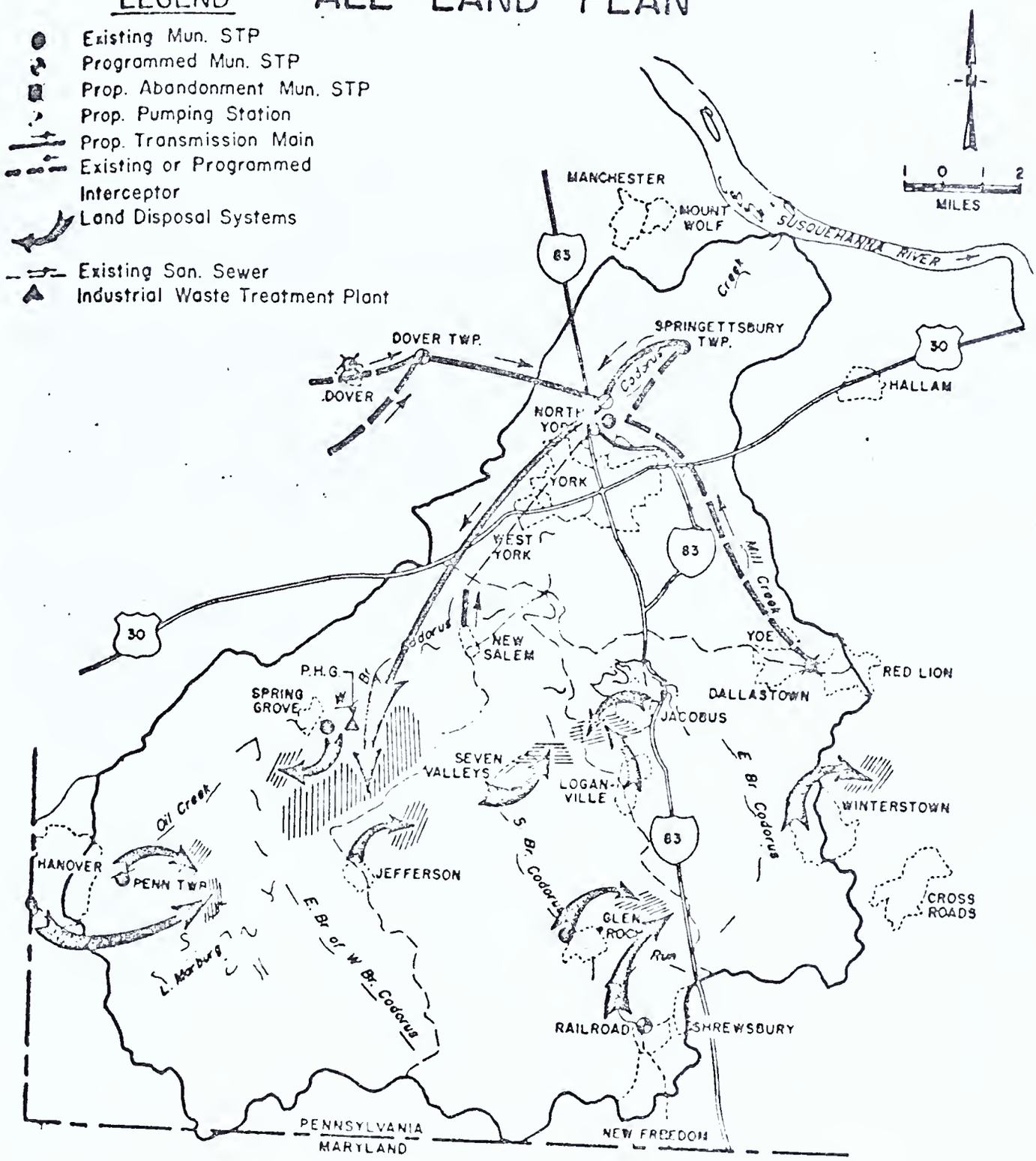
The following unit processes would be included in the AWT:

Nitrification-Denitrification	Complete-mix nitrification sludge aeration basin and an anaerobic sludge reaction basin with methanol addition.
Chemical Treatment and Sedimentation	Phosphorus removal process consisting of lime addition, rapid mix, flocculation and sedimentation.

FIGURE 3

CODORUS CREEK WASTEWATER MANAGEMENT STUDY

ALL LAND PLAN



1. Storage pond surface area -- 700 acres.

2. Unusable land (steep slopes) -- 2,753 acres.

3. Potential irrigation area -- 9,600 acres.

A pretreatment facility consisting of three aeration cells to provide a 3-day detention time for 51 mgd (year 2000 flow) would be constructed for secondary treatment of raw wastes. Two storage ponds would be formed by constructing dams on the upper reaches of the Stoverstown Branch and an unnamed tributary to Codorus Creek. Storage pond B (Figure 4) would have a maximum depth of 80 feet and provide for sedimentation and sludge storage for waste discharges from the pretreatment facility. After 30 days storage, the clarified effluent would be discharged into pond A (maximum depth 130 feet) for storage and regulation of irrigation. Sludge would be dredged from pond B, chemically treated and disposed of on land not used for irrigation.

The storage ponds would provide a combined 120-day working storage capacity. The rims of the ponds would be sculptured to a one-to-five slope to minimize land exposure at maximum drawdown. Floating aerators would be provided to maintain aerobic conditions in the ponds.

The irrigated land would be provided with a supplemental drainage system (wells or tile drains) and a rapid fall turbulent flow segment at each discharge point to the surface water. (The layouts and cost estimates for this report were based on wells with a suggestion that further investigations on feasibility of tile drains be made). Wells spaced on 1,000 foot centers and 215 feet deep would be provided to pump at a rate of 120 gpm. The rate of application of irrigation waste water would be 2 inches per week for 8 months annually. At this rate a site capacity of 44 mgd would be developable and could treat the York area flows until 1993. Site management options to treat the year 2000 flow (estimated 51 mgd or more) would be as follows:

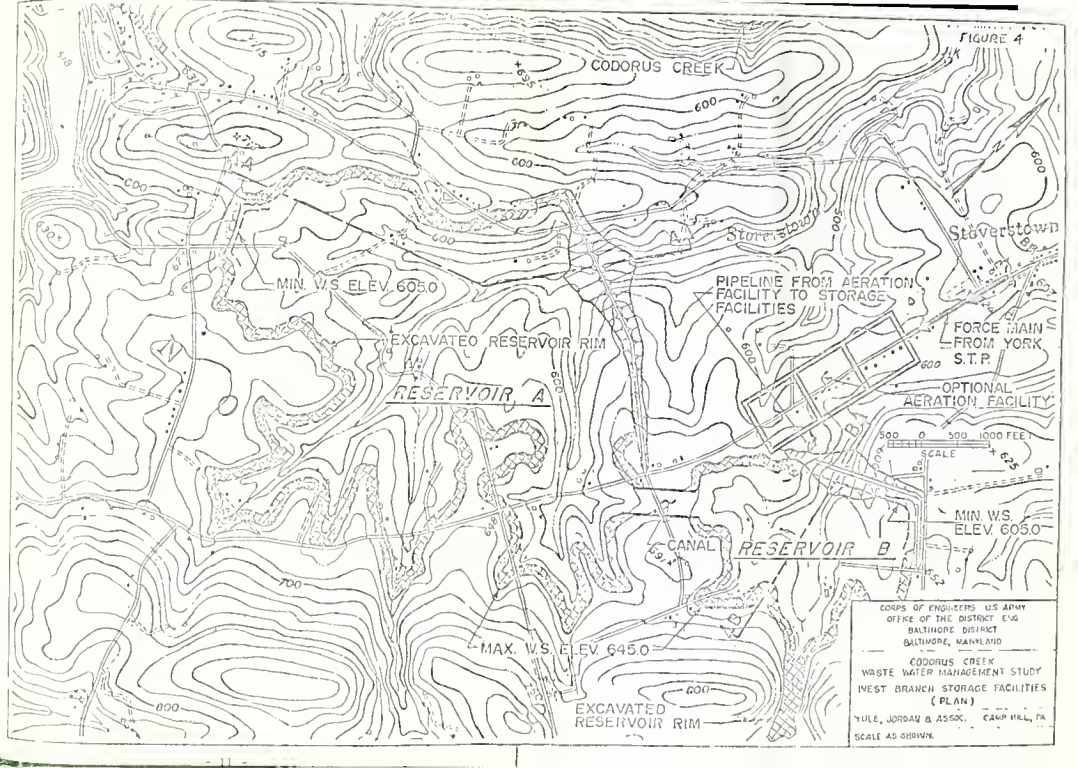


FIGURE 4
CODORUS CREEK
Stoverstown Br.
Stoverstown
MIN. W.S. ELEV. 605.0
EXCAVATED RESERVOIR RIM
RESERVOIR A
PIPELINE FROM AERATION FACILITY TO STORAGE FACILITIES
FORCE MAIN FROM YORK S.T.P.
OPTIONAL AERATION FACILITY
500 0 500 1000 FEET
SCALE
MIN. W.S. ELEV. 605.0
CANAL
RESERVOIR B
MAX. W.S. ELEV. 645.0
EXCAVATED RESERVOIR RIM
CORPS OF ENGINEERS U.S. ARMY
OFFICE OF THE DISTRICT ENG
BALTIMORE DISTRICT
BALTIMORE, MARYLAND
CODORUS CREEK
WASTE WATER MANAGEMENT STUDY
WEST BRANCH STORAGE FACILITIES
(PLAN)
YULE, JORDAN & ASSOC. CAMP HILL, PA.
SCALE AS SHOWN

1. Reuse of secondary treated waste water by P. H. Glatfelter Company as raw process water in paper making. Approximately 20-28 mgd will be reused to reduce irrigation flows.

2. Incorporation of a thermal power plant at the storage pond site which would reduce irrigation flows through evaporation losses.

3. Extension of irrigation period to 9 months annually.

Treatment of waste waters from the 10 upper basin communities could be achieved with lesser land requirements. The estimated total land requirements for the upper basin communities for the year 2000 is 3,844 acres which include requirements for storage lagoons and irrigated lands. At Hanover, Penn Township, Spring Grove, Glen Rock and Railroad-New Freedom, the existing treatment facilities would provide secondary treatment prior to discharge to storage lagoons at their respective land treatment sites. The land treatment system for Loganville, Seven Valleys, Jacobus, Jefferson, and Winterstown would have secondary treatment provided by aerated lagoons or package type treatment plants before discharging into the storage lagoons. (Aerated lagoons were used for purposes of cost estimation).

Sludge would be disposed of by application to agricultural lands.

A modification of this plan referred to as the "Modified All Land Plan", proposes that the York, Springettsbury and Dover Township plants would provide secondary treatment as programmed in the Basic All Water Plan. Effluent from the Springettsbury and Dover Township plants would be pumped to the York plant location and then all treated wastes would be pumped to the land treatment site storage lagoon. The sludge would be digested at the secondary treatment plants and trucked to agricultural application sites. The other principal change would be the substitution of secondary package treatment plants for the aerated lagoons for the upper basin communities of

Jacobus-Loganville, Seven Valleys, Jefferson and Winterstown.

December Plan -- This plan incorporates the York urban area part of the Basic All Water Plan with the upstream communities facilities part of the Modified All Land Plan. Figure 5 presents the general plan.

Secondary treatment for all waste flows from the York, Springettsbury, Red Lion, and Dover service areas will be provided at the York, Dover Township, and Springettsbury treatment facilities. The Red Lion treatment plant would be abandoned and all wastes from the Red Lion-Dallastown-Yoe area would be transported to the Springettsbury treatment plant through the Mill Creek interceptor. The advanced waste treatment (AWT) plant would be located adjacent to the York secondary treatment plant. The AWT plant would be provided with a pipeline to discharge the treated effluent into Codorus Creek at a location above York to augment low flows. The unit processes for the AWT would be the same as in the Basic All Water Plan.

Wastes from the upstream communities would receive secondary treatment and then be irrigated on land. The communities of Hanover, Penn Township, Spring Grove, Glen Rock and Railroad-New Freedom would provide secondary treatment at their present treatment facilities and discharge the effluent into storage lagoons for irrigation on land. Aerated lagoons or package type treatment plants would provide secondary treatment for wastes from Loganville, Jacobus, Jefferson and Seven Valleys before discharging into storage lagoons for irrigation. A total of approximately 4,000 acres of land would be required.

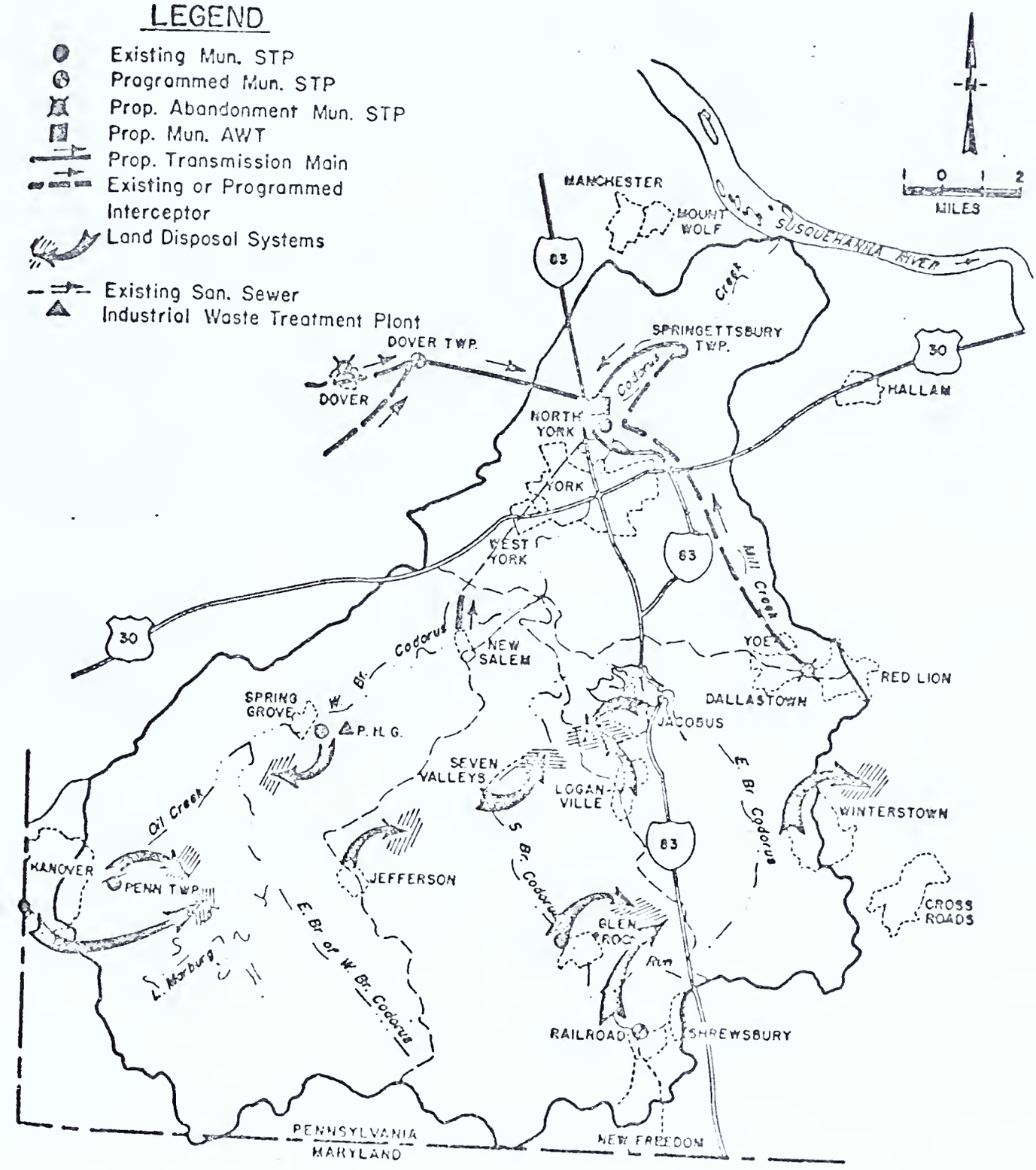
Sludge will be disposed of by application to agricultural land.

Water Reuse Option--Limited availability of in-basin water supplies and the problem of stream flow reductions through diversion or withdrawals creates a need to explore water reuse on a major scale. The P. H. Glatfelter paper mills as the major point source user of basin water supply (presently 17 mgd) presents a prime reuse potential. Feasibility studies have shown that secondary effluent from the York area treatment plants could be treated to a satisfactory process water quality at the raw water treatment facility presently in place at the mill with only a

FIGURE 5

CODORUS CREEK WASTEWATER MANAGEMENT STUDY

DECEMBER PLAN



modest cost increase. The water reuse option proposed with each of the alternate plans are as follows:

a) Reuse with Plan to Meet Current Standards--A transmission pipeline would be constructed from the City of York treatment plant to the P. H. Glatfelter paper mill for delivery of secondary effluent. Chemical treatment, filtration and reaeration facilities at York would be constructed with the capability of treating the entire York City flow during periods when delivery of secondary effluent to the paper mill is not desired. Waste water from the Glatfelter paper mill will be discharged into the West Branch of Codorus Creek after comparable treatment. The general plan is shown in Figure 6.

b) Reuse with Basic All Water Plan and December Plan--A transmission pipeline would be constructed from York City waste treatment plant to the raw water treatment plant at the paper mill. A detention basin to hold five days of average reuse flow would be constructed near the York treatment plant. Flows during temporary upsets and of poor effluent quality which prohibit reuse would be held in the detention basin before introduction into the advanced waste treatment (AWT) plant. The excess York area effluent would be treated in the AWT located adjacent to the Springettsbury secondary treatment plant. The general plan is shown in Figure 7.

c) Reuse with All Land Plan--Treated waste water from the storage pond would be transmitted by gravity pipeline to the P. H. Glatfelter paper mill. After reuse in the paper mill, the process discharge would receive secondary treatment at the paper mill's treatment plant and be returned to the storage pond for final treatment. (See Figure 8)

Industrial Waste Management--There are two independent industrial waste management situations which must be dealt with separately. The first is the general problem posed by the various industrial discharges in the York and Hanover areas and the other is the treatment requirements of the P. H. Glatfelter Company.

It is proposed that the industrial discharges in the York and Hanover areas be collected in the sanitary systems after adequate pretreatment to remove toxic and other materials not amendable to treatment by the York and Hanover treatment plants is accomplished.

FIGURE 6

CODORUS CREEK WASTEWATER MANAGEMENT STUDY

REUSE OPTION A

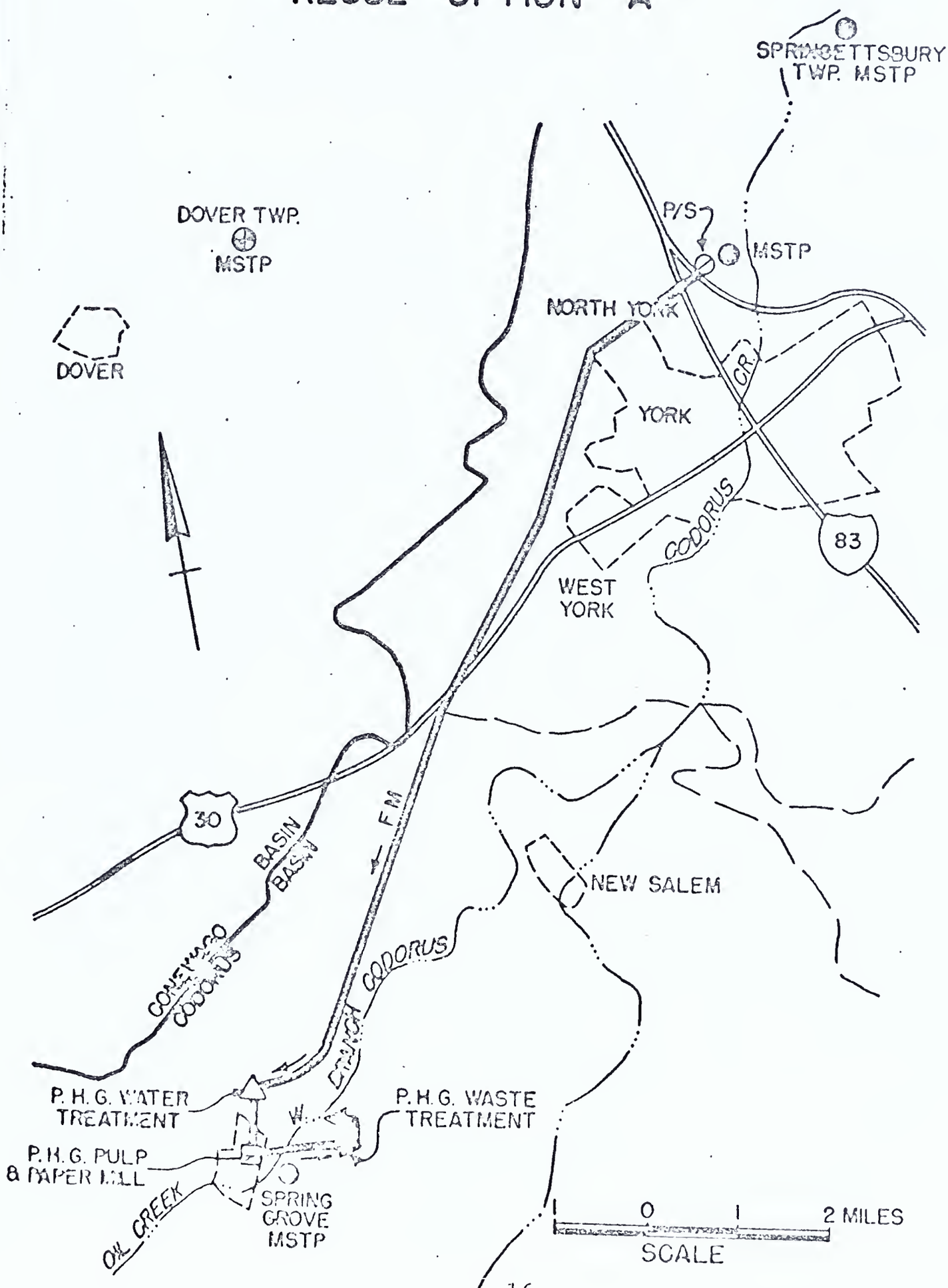


FIGURE 7

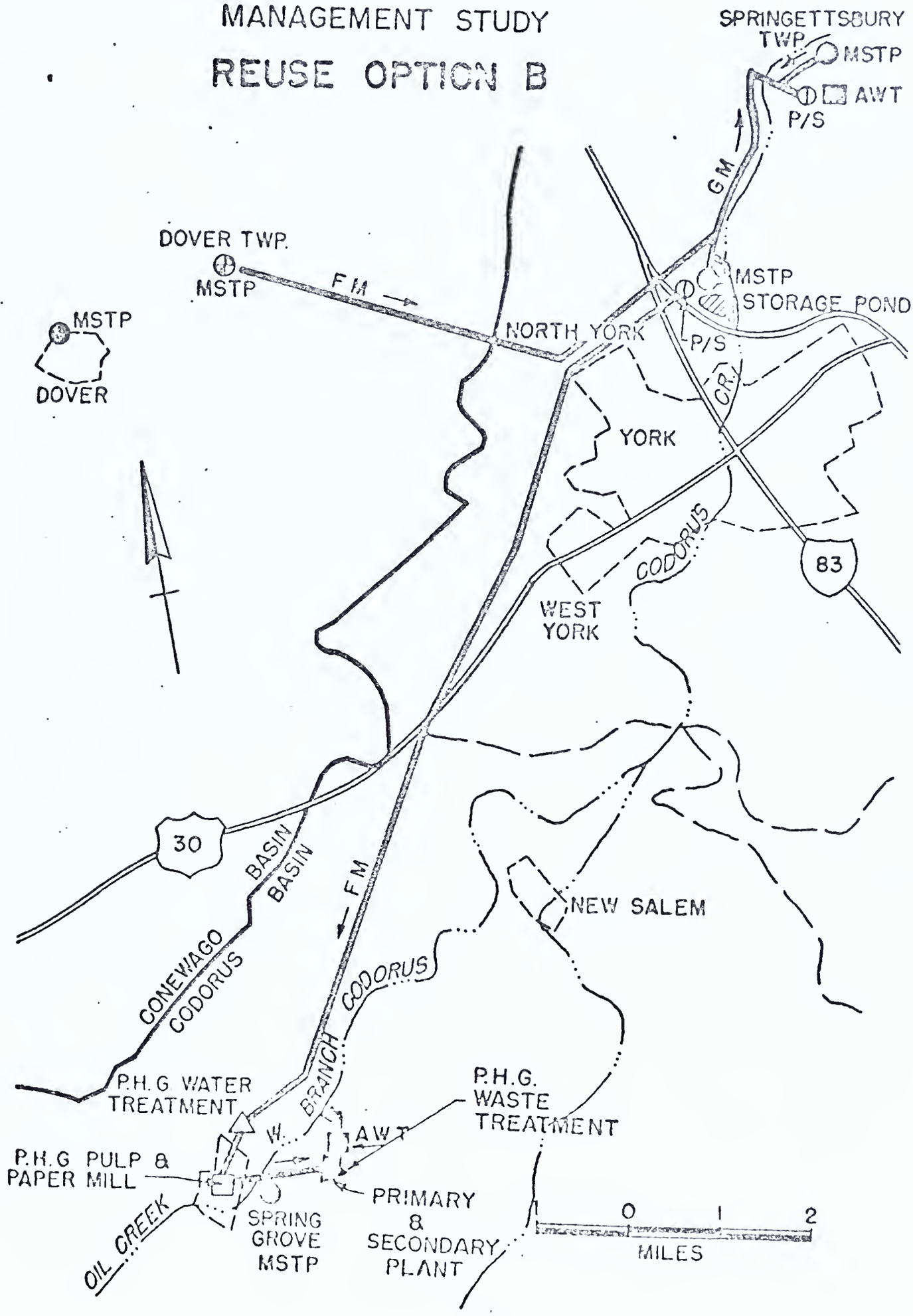
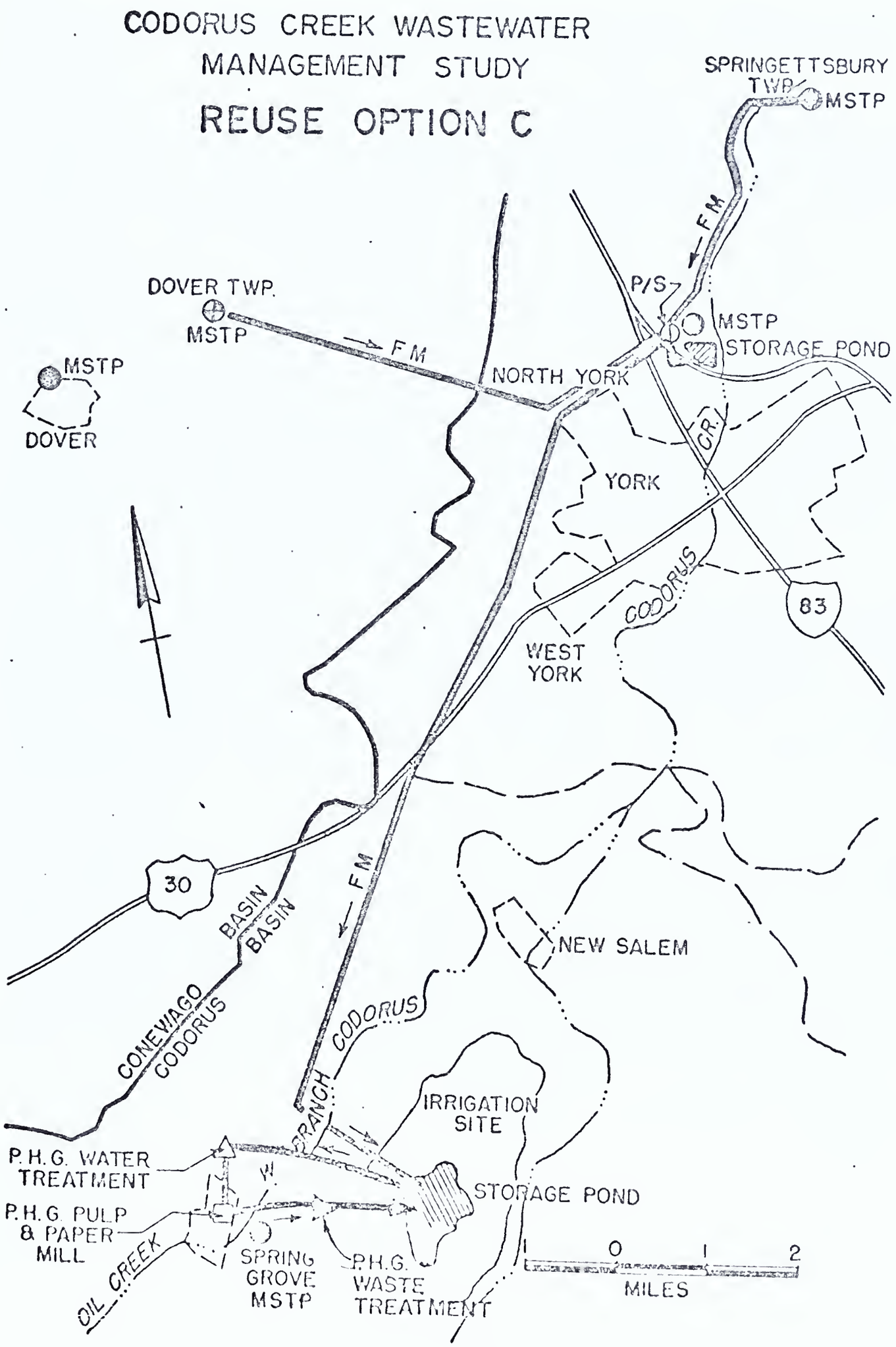

CODORUS CREEK WASTEWATER
MANAGEMENT STUDY
REUSE OPTION B
SPRINGETTSBURY TWP.
MSTP
AWT
P/S
GM
DOVER TWP.
MSTP
FM
MSTP
DOVER
NORTH YORK
MSTP
STORAGE POND
P/S
CR
YORK
CODORUS
83
WEST YORK
30
BASIN
BASIN
FM
NEW SALEM
CONEWAGO
CODORUS
CODORUS
BRANCH
P.H.G WATER TREATMENT
P.H.G.
WASTE
TREATMENT
W.
AWT
P.H.G PULP &
PAPER MILL
PRIMARY
&
SECONDARY
PLANT
SPRING
GROVE
MSTP
OIL CREEK
0
1
2
MILES

FIGURE 8


CODORUS CREEK WASTEWATER
MANAGEMENT STUDY
REUSE OPTION C
SPRINGETTSBURY TWP.
MSTP
FM
P/S
MSTP
STORAGE POND
DOVER TWP.
MSTP
FM
NORTH YORK
MSTP
DOVER
CR.
YORK
CODORUS
83
WEST YORK
30
BASIN
BASIN
FM
NEW SALEM
CONEWAGO
CODORUS
BRANCH
CODORUS
IRRIGATION SITE
P.H.G. WATER TREATMENT
W.
STORAGE POND
P.H.G. PULP & PAPER MILL
OIL CREEK
SPRING GROVE MSTP
P.H.G. WASTE TREATMENT
1 0 1 2
MILES

For the P. H. Glatfelter Company wastes, possible treatment technologies available are:

a) Chemical clarification with lime followed by biological treatment, selective adsorption with activated carbon for COD and color removal, polishing filtration, reaeration combined with evaporative cooling, and chlorination.

b) Chemical clarification with lime followed by biological treatment, land application and reaeration.

Method a), would be the appropriate choice in conjunction with the selection of the All Water Plan and Method b), may be the optimum choice with the selection of the All Land Plan. Integration of the Glatfelter wastes with the municipal wastes in the All Land Plan would enhance the treatment of the process waste and facilitate site acquisition by being part of the municipal treatment program.

The company is presently evaluating programs and processes to recover and reuse a large amount of the paper fiber and other process material that make up most of the waste solids. Recovery and reuse will substantially reduce the quantity of sludge to be disposed. Alternative methods of sludge disposal would include application to sandy soil as soil builder, reclamation of strip mine areas and land filling at select environmentally safe sites.

Stormwater Management -- The existing storm sewer system in York, Spring Grove and Hanover-Penn Township were considered the ultimate point discharges of stormwater to make it possible to incorporate them into the alternatives for choice. The stormwater plan requires storage areas and transmission lines to transport stored stormwater to the waste treatment plants as capacity permits. Detailed planning for stormwater management in rural and areas without storm sewers are beyond the scope of this Study.

CORPS' STUDY - ALTERNATIVES FOR CHOICE

The following alternatives were specifically recommended for consideration by the residents of the Codorus Creek Basin:

1. Basic All Water Plan

2. Basic All Land Plan

3. December Plan

4. Water Reuse

SUSQUEHANNA RIVER BASIN COMMISSION - STAFF COMMENTS

The concepts presented in the specific alternatives recommended for consideration and selection generally appear to be compatible with the intent of the Susquehanna River Basin Commission Comprehensive Plan. The comments provided below, particularly for the land-based plans, could have been taken into consideration during the conduct of the Study, but they were not apparent in the material reviewed.

Plan to Meet Current Standards -- This plan provides an interim measure consistent with the 1983 goals of providing water quality for protection and propagation of fish and wildlife and for recreation in and out of the water. It would postpone the requirement for meeting the 1985 national goals of providing zero discharge of pollutants. The greater numbers of treatment facilities increases the complications of conducting a water quality management program and increases the chances of pollutant discharges due to plant upsets.

Basic All Water Plan -- The concept of this plan is compatible with the intent of the Susquehanna River Basin Commission Comprehensive Plan and the Water Pollution Control Act amendments of 1972 in that it would improve the quality of the waters of Codorus Creek, regionalize waste water management in the basin, apply the best practicable technology and very nearly achieve the 1985 national goals.

This plan allows flexibility for future expansion after the year 2000.

Basic All Land Plan -- The concept of this plan is generally compatible with the intent of the Susquehanna River Basin Commission Comprehensive Plan and the Water Pollution Control Act amendments of 1972 in that it would improve the quality of the waters of Codorus Creek, regionalize waste water management, apply the best practicable technology and very nearly meet the 1985 national goals. However, it is felt that there are many problems that should be investigated further in detail to insure the protection of the waters of the basin.

Additional detailed studies should be conducted to confirm the suitability of the proposed land treatment site be-

fore this alternative is recommended. Information in the Geologic Consultant's Report states that emphasis was placed on representative sampling of terrainal elements rather than on detailed analysis of individual sites. Additional detailed investigations were also recommended by the consultants. The consultants' discussion appeared to emphasize investigation on the suitability of the area for waste water irrigation only. Little or no mention is made of suitability studies on pond sites for storage of waste waters. A thorough study should be made of structure of the underlying formations at the waste water storage pond sites to insure that there are no fissures which could rapidly transport the waste waters to contaminate ground waters. The head created by impoundment of waste waters over the stream bed within the storage pond could possibly change that reach of the stream from a gaining stream to a losing stream and thereby contaminate the ground waters. Similar investigations may be required at the storage sites for the upper basin communities.

The U. S. Geological Survey maintained numerous test wells within the proposed treatment site and probably numerous private wells also exist there. There is no indication that provisions have been made for completing an inventory of the wells and for sealing these wells as necessary to prevent loss of waste water through these wells into the groundwaters without benefit of filtration by the soil.

The supplemental drainage system as proposed for the York area treatment sites required 392 drainage wells, each 215 feet deep and pumping 120 gpm at 1,000 foot centers. U. S. Geological Survey well yield data from test wells in the general area indicate a range of 1 gpm to 100 gpm. The mean yield is 8 gpm and the arithmetic average is 15 gpm which are considerably lower than the proposed pumping rate. Additional tests in the proposed treatment site should be conducted to verify the proposed 120 gpm pumping rate. If the wells in the treatment site do not yield considerably more than the USGS test wells indicate, additional wells will be required to prevent a rise in the water table and possible flooding of low lying areas in and adjacent to the treatment site. If the wells' yield of 120 gpm can be met, the total pumping capacity will exceed the quantity of waste water applied by a considerable amount resulting in a discharge of large quantities of groundwater into the surface streams.

The water reuse option proposes the use of waste water from the storage pond by the P. H. Glatfelter Company which

would extend the useful life of the irrigation lands from 1993 to the year 2000. If the waste water is returned to the land treatment site after secondary treatment by P. H. Glatfelter Company and assuming that water losses are minimal in the paper making process, there would still be a requirement for expansion of the irrigation site after 1993. In order to extend the useful life of the irrigation land to the year 2000, P. H. Glatfelter would have to discharge the waste water into the West Branch of Codorus Creek after appropriate treatment or provide a separate land treatment site.

The comments made have been directed to the York urban area land treatment site, but those on the suitability of the land treatment sites could also apply to the upper basin treatment sites although the magnitude of the questions to be clarified is smaller.

This alternative appears to be the least desirable, at present, because it poses problems that need to be clarified before the reliability of the land treatment system can be established. Further, expansion of the treatment site would be affected to a greater extent by the future development of the Codorus Creek Basin because of the greater land requirements.

The Geologic Consultants' Report, "Physical Characteristics of Codorus Creek Basin, Pennsylvania, Relative to Waste Water Application" which is included as part of Appendix A, Volume III, refers to an Appendix C-2 for results of shallow refraction seismic studies. Appendix C-2 was not included in the report.

The presentation on the design and construction of the storage ponds for the York area waste flows in Appendix A, Volume IV, page IV-62 and in the Annex to Volume IV, "Basis of Design and Cost Estimate" indicate that the maximum drawdown in the storage ponds would be 20 feet. However, on page IV-66 and in Exhibit IV-20 the maximum drawdown for the storage ponds is indicated as being 40 feet.

December Plan -- Comments for the All Land Plan also apply to this plan.

Industrial Waste Management Plan -- Selection of the land application waste treatment process for the P. H. Glatfelter

Company in conjunction with the All Land Plan will create a serious problem in that that proposed land treatment site will be inadequate before 1985. The developable capacity for the irrigation site is 44 mgd and by 1985 the total municipal and Glatfelter waste flow is projected to be 58 mgd. If waste water reuse is practiced by the P. H. Glatfelter Company the use of the irrigation site may be extended beyond 1985, but an alternate disposal method for the wastes in excess of 44 mgd will have to be implemented prior to the year 2000.

SUSQUEHANNA RIVER BASIN COMMISSION - STAFF CONCLUSIONS

a) The Plan to Meet Current Standards does not conform to the Susquehanna River Basin Commission Comprehensive Plan for regionalizing wastewater treatment and management. The decentralization of the treatment facilities will create complications in conducting an efficient wastewater management program for the Codorus Creek Basin. The potential for undesirable pollutant discharges due to individual plant upsets is greater than in the other alternatives because of the greater number of waste discharges. This alternative provides only a temporary solution which would require upgrading and modifications in the near future to meet the 1985 national goals and the Susquehanna River Basin Commission Comprehensive Plan for regionalizing wastewater treatment and management.

b) The Basic All Water Plan is compatible with the Susquehanna River Basin Commission Comprehensive Plan for regionalizing wastewater treatment and management. This alternative would very nearly achieve the 1985 national goals and incorporates the best practicable technology. It provides flexibility for future expansion and modifications and has the potential to maximize use of existing facilities.

c) The concepts of the Basic All Land Plan and the December Plan are generally compatible with the Susquehanna River Basin Commission Comprehensive Plan and the 1972 amendments of the Water Pollution Control Act. However, further detailed studies should be conducted to substantiate suitability of the land treatment site before this alternative is advanced as a positive and reliable alternative.

d) The Water Reuse Option is compatible with the Susquehanna River Basin Commission Comprehensive Plan and would augment the limited availability of in-basin water supply.

SUSQUEHANNA RIVER BASIN COMMISSION
STAFF INTERIM RECOMMENDATIONS

Of the several alternative plans for regionalizing waste water management in the Codorus Creek Basin, the Basic All Water Plan and the Water Reuse Option appear at this time to most closely conform to the Commission's Comprehensive Plan. The Basic All Water Plan eventually may, with development of details regarding integration of the existing facilities, have the most potential for State and local acceptance.

Implementation of any one of the alternative plans is not imminent. It is therefore recommended this staff report serve as the Commission's interim comment on the overall Study with recognition that before any final plan of regional wastewater management is implemented, the proposal be subject to further review and action at that time by the Commission.

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